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BACKGROUND

The San Jose airport provides facilities for eleven commercial airlines, corporate and general aviation activities, aircraft support services, and airline passengers.

Airport Facilities

The airport site occupies 1,050 acres and has three parallel runways and connecting taxiways. The main runway is 8,900 feet in length, including 1,500 feet of overrun area, and contains a modern high intensity lighting system and a flasher approach system. The main runway is used for air carrier operations and most instrument landings. The secondary runway is 4,419 feet and contains a medium intensity lighting system and is used for most general aviation operations. A third runway of 3,000 feet is for single engine aircraft and is used primarily for flight training activities.

The terminal building includes a lobby, ticket counters, baggage claim area, passenger gates, car rental facilities, food and beverage purveyors and administrative offices for airline personnel and City staff. Private concerns provide these direct services to the public under contract with the City. These contracts generally provide for rental of space and a percentage of the concessionaires' revenue. Airlines pay for the rental of space and a fee for each landing which is based upon the aircraft's gross landing weight.

The airport also leases space to entities called fixed base operators (FBOs) who provide services to both commercial airlines and general

aviation. These services include fueling, aircraft maintenance and repair, aircraft charter service and flight instruction.

Airport Expansion

The airport is currently engaged in a major capital improvement program designed to meet the needs of air traffic into the 21st Century. The overall plan is based on passenger growth projected to the year 2006.

The goals of the development program are:

1. To accommodate the forecast of airline, passenger and vehicular requirements through the year 2006.

2. To maintain and improve passenger convenience.

3. To maintain architectural and functional continuity with currently planned airport facility improvements (Terminal A).

4. To integrate the terminal concept with planned infrastructure improvements in the area.

5. To maximize the use of available airport land.

The following table shows airport passenger growth projections and the corresponding facility expansion required to meet such major passenger increases through the year 2006.

TABLE I

SUMMARY OF KEY AIRPORT GROWTH FACTORS
AND THE FACILITIES NEEDED
TO MEET SUCH GROWTH THROUGH THE YEAR 2006

Item	1986	1991	1996	2006
Annual Passengers:	5,800,000	9,6000	12,800,000	17,600,000
Aircraft Gates:	20	28	36	45
Vehicular Parking Spaces:	7,200	11,400	15,000	20,300
Terminal Building Area: (Sq. Ft.)	300,000	430,000	552,000	693,000
Curb Frontage: (Linear Ft.)	740	970	1,200	1,700

Construction is now in progress on stage one of the expansion plan and is expected to be completed by the end of 1989. Included in this phase is Terminal A (which will serve US Air and American Airlines), the extension of Terminal Drive to the north, modifications to Airport Boulevard, and creation of the west, east, and remote daily parking areas. Later this year, the City plans to market bonds for the construction of a structural parking lot contiguous to Terminal A.

Airport Budgeting

The San Jose Airport is operated as an enterprise fund. Unlike most other government activities, enterprise funds are characterized by the receipt of direct payment for the service or services they provide. The airport generates adequate revenues to cover all expenses and provide for a renewal and replacement fund for future airport needs. TABLE II, which follows,

shows the Airport Department's budgeted operating expenses for fiscal years 1986/87 through 1988/89.

TABLE II

SUMMARY OF AIRPORT DEPARTMENT BUDGETED
OPERATING EXPENSES FOR 1986/87 THROUGH 1988/89

Budget Expense Category	1986/87	1987/88	1988/89
Management and Administration	$ 5,667,924	$ 5,555,106	$ 5,760,351
Airfield Area	1,873,371	1,263,361	1,499,330
Airline Terminal Building	3,629,333	3,822,607	4,215,075
Parking and Roadways	3,283,633	4,484,137	5,111,951
General and Non-Aviation	603,753	581,179	620,701
Petroleum Products	1,859,346	781,543	649,397
TOTALS	$16,917,360	$16,487,933	$17,856,805

TABLE III summarizes the Airport Department's major budgeted revenue sources for fiscal years 1986/87 through 1988/89.

TABLE III

SUMMARY OF MAJOR AIRPORT DEPARTMENT
BUDGETED REVENUE SOURCES
FOR 1986/87 THROUGH 1988/89

Revenue Category	*1986/87*	*1987/88*	*1988/89*
Landing Fees	$ 2,581,405	$ 4,930,188	$ 4,110,750
Terminal Rental	1,043,500	1,105,459	1,203,375
Terminal Building	5,115,597	5,493,907	5,562,000
Airfield Area	617,159	1,047,247	1,070,000
Parking and Roadways	9,353,222	10,999,010	12,200,000
Other Cost Centers	3,419,403	1,871,775	2,780,000
Petroleum Products	2,004,569	1,189,436	967,000
Prior Year Surplus	2,085,304	2,166,555	2,907,050
TOTAL	$26,220,159	$28,803,577	$30,800,175

The two largest categories of Airport Department revenues are parking concessions and aircraft landing fees. Combined, they make up about 50 to 60 percent of total Department revenues.

The Department adjusts aircraft landing fees annually with the objective of using them as the revenue variable to balance the budget. Once all other expenses are estimated and a reasonable surplus is factored in, landing fees are derived to provide the remaining revenue necessary to cover anticipated expenses. The computation of landing fees is done on a unit basis, with each unit representing 1,000 pounds of gross landing weight. The airport determines the total pounds of gross landing weight the airlines estimate will land at the airport for the year. That figure is compared to the total dollars required to balance the budget and a unit rate is derived. During the course of the year, each air carrier landing results in the unit rate being multiplied times the certified maximum gross landing weight of the aircraft. For example, if an American Airlines 727 lands with a maximum gross landing weight of 200,000 pounds and the unit rate is $1.00/1,000 lbs of landing weight, the fee would be $200 (200,000 lbs x $1.00/1,000 lbs).

The airlines review the Department's budgets. If the fees escalated rapidly, without a corresponding benefit to the airlines, the airport could run the risk of the airlines reducing or eliminating service from the airport. While this is not likely, it does provide a check against a precipitous increase in airport landing fees.

Airport operations generate revenues in excess of operating expenses and produce an operating surplus each year. In addition, the Airport has separate funds for such activities as the retirement of bond indebtedness and renewal and replacement of airport facilities. The airport needs to exercise financial prudence as the current expansion plan substantially increases annual fixed expenses through the creation of extensive bonded indebtedness and its corresponding annual debt payments. As fixed expenses increase as a percentage of total expenses, management's discretion and flexibility over the budget becomes more constrained, resulting in a need for more precise financial and operational planning.

Air Operations

The number of airport passengers served has nearly doubled between 1980 and 1987. While air carrier operations increased about two-thirds, general aviation operations have declined during that same period. TABLE IV summarizes the number of air carrier and general aviation passengers served from 1980 through 1987.

TABLE IV

SUMMARY OF THE NUMBER OF AIR CARRIER PASSENGERS AND GENERAL AVIATION FLIGHT OPERATIONS FROM 1980 - 1987

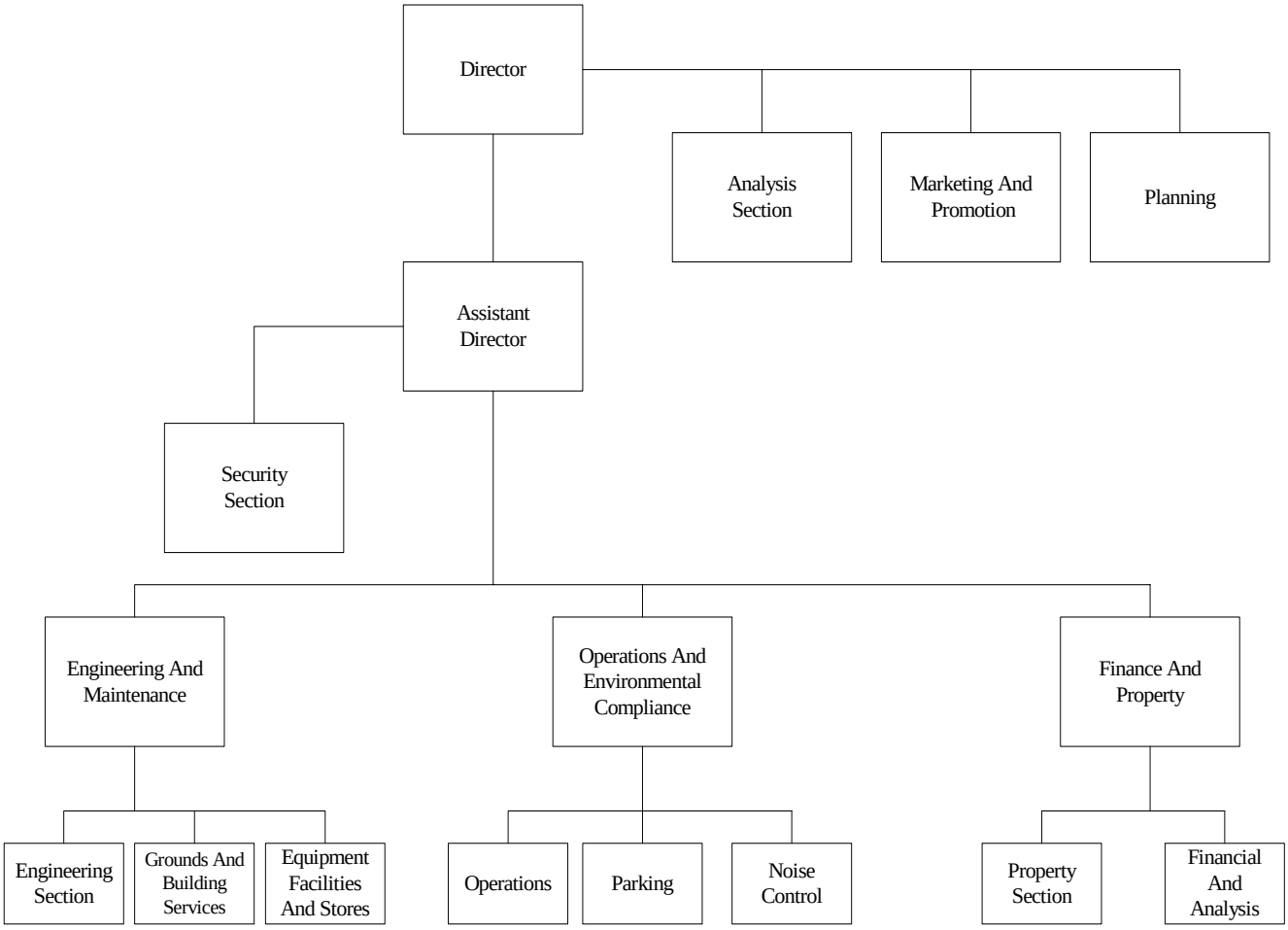
Year	Passengers Served	Air Carrier Operations Annual Takeoffs/ Landings	General Aviation Operations Annual Takeoffs/ Landings	Total Aircraft Operations
1980	2,876,918	62,155	384,870	447,025
1981	2,823,969	59,667	297,372	357,039
1982	3,051,184	60,130	264,936	325,066
1983	3,550,368	72,410	256,025	328,435
1984	3,900,589	82,493	285,474	367,967
1985	4,708,878	92,749	272,083	364,832
1986	5,659,143	102,459	247,892	350,351
1987	5,693,944	105,552	252,373	357,925

It should be noted that, although there has been an overall decrease in general aviation, corporate aviation and the use of multi and jet engine aircraft have been increasing. The segment of general aviation that has declined the most is single engine recreational flying.

AIRPORT MANAGEMENT

The management team is made up of the Director of Aviation, Assistant Director and Deputy Directors for Operations, Engineering, Finance and Property and the Airport Security Police Chief. The airport's functional activities and organizational relationships are illustrated on the following page.

Organization Chart
Airport Department
City Of San Jose



The focus of our review was on safety, which from an organizational viewpoint, is the responsibility of the Airport Police and Operations. The Federal Aviation Administration (FAA) and the airlines also have major safety responsibilities which will be discussed later.

Managerial Constraints

Airport management has numerous regulatory constraints on their autonomy. As a result, management's flexibility varies depending upon the function being performed. For example, some staff functions, such as planning, finance, property management, marketing and promotion provide the full range of managerial discretion. On the other hand, safety and security functions are shared with the FAA and the airlines. In addition, the FAA mandates minimum standards of safety and security and these standards are a condition of certification for airports. Airports must provide appropriate facilities and operating systems to conduct flight operations with a high degree of safety and provide a secure environment for passengers. Airports are required to provide detailed explanations of how they conform to FAA requirements as a precursor to receiving an Airport Operating Certificate.

Federal Aviation Administration

The FAA is responsible for aircraft operation and safety in the United States. This responsibility is discharged through the FAA's operation of the nation's air traffic control system, certification of airports, certification of the airworthiness of new aircraft types as they are introduced, and the

promulgation of regulations governing airport and aircraft operations and maintenance.

Federal Aviation Regulation (FAR) 139 governs airport certification and specifies the operational and safety standards required for an airport to maintain certification. FAR 139 explains what the airport's operation manual must contain and mandates an extensive inspection program. A later section on flight operations safety will discuss the inspection program in greater detail.

Commercial Airlines

Airline activities are governed by FARs 108, 121 and 135 which specify flight crew requirements, aircraft safety requirements and security procedures. Since deregulation, the FAA has relinquished substantial economic control over the airlines. The competitive nature of the industry, coupled with deregulation, has somewhat destabilized the industry. The airlines now generally make decisions regarding locations to serve and frequency of service on the basis of the profitibility of the route. The airlines give less consideration to factors such as public service and convenience. TABLE V shows the airlines currently providing scheduled passenger service to the San Jose Airport and their 1987 passenger loads.

TABLE V

SUMMARY OF THE AIRLINES PROVIDING SCHEDULED PASSENGER SERVICE TO THE SAN JOSE AIRPORT AND THEIR PASSENGER LOADS IN 1987

Airline	Number of Passengers in 1987	Percent of Total
American Airlines/American Eagle	1,896,000	33.3
USAir	1,287,000	22.6
Continental	769,000	13.5
United Airlines/United Express	592,000	10.4
America West Airlines	421,000	7.4
Delta	268,000	4.7
Alaska Airlines	233,000	4.1
Trans World Airlines	142,000	2.5
Skywest	23,000	.4
Sunworld and Charter[1]	63,000	1.1
TOTAL	5,694,000	100%

[1] Sunworld ceased operations in September of 1987.

SCOPE AND METHODOLOGY

During our preliminary survey of the San Jose Airport Department, we identified the following areas for possible audit:

OPERATIONS

- Noise Abatement
- Ground Transportation
- Airfield Operations
- Gate and Ramp Management
- Parking Management
- Fixed Base Operations
- Emergency Procedures

AIRPORT ADMINISTRATION

- Marketing/Promotion
- Planning/Development

SECURITY AND SAFETY

For our first report on airport activities, we concentrated on those functions and procedures relating to safety. Another report on parking operations and ground transportation will be forthcoming.

We selected the following four specific areas for our first audit report:

- Flight Operations Safety
- Emergency Planning
- Ramp Driving Permits
- Control of Airfield Access

We reviewed pertinent FAA requirements, the Airport Department's Operations Manual, airfield inspection reports and corresponding work orders and files, and the Airport's Emergency Plan. In addition, we performed a risk analysis of the areas under review to ascertain the basic threats intrinsic to the functions. We discussed with airport officials these threats and the corresponding controls the Department has in place to address these threats. Based upon our review, we developed threat matrices for the areas under audit. These threat matrices are included as Appendix A, B and C.

FINDING I

THE AIRPORT NEEDS TO IMPROVE ITS DOCUMENTATION AND FOLLOW-UP PROCEDURES WHEN DAILY AIRFIELD INSPECTIONS DISCLOSE DEFICIENCIES

The Airport Operations Division is responsible for performing daily airfield inspections. Our review disclosed that airfield deficiencies noted during these daily inspections were 1) not always documented by the creation of a work request to resolve the problem, and 2) not adequately documented as being subsequently corrected. This lack of proper documentation impairs management's ability to monitor and administer the airfield inspection and maintenance program.

Daily Airfield Inspections

Air operation safety is a joint effort of the FAA, the Airport Department and the airlines. The FAA maintains the integrity of the air traffic control system with personnel and equipment, prescribes the safety standards the airlines must meet to operate a scheduled passenger service and sets the standards for facilities, maintenance and emergency response with which airports must comply to maintain an operating certificate.

The airlines are responsible for maintaining their aircraft in an airworthy condition, providing passenger security through screening at boarding areas and assuring that flight crews are properly trained.

The Airport Operations Division is responsible for performing daily airfield inspections. A checklist form is used which is keyed to the airport certification manual. The airfield areas which are inspected on a daily basis are listed below:

- Runways, including edge, threshold and approach lights, markings and signs.
- Taxiways, including lights and markings.
- Terminal ramp area.
- Obstruction lights, beacon lights, wind indicator and boundary fence.
- Bird hazard potential.
- Status of men and equipment at the fire and rescue station.
- Condition of mobile radios.

The Airport Procedure Manual states the purpose of the self-inspection program as follows:

> *"...The purpose of this section is (1) to set forth the functional statements and procedures relating to the types and frequencies of inspections necessary to assure continuing compliance with the safety standards herein established, (2) to identify the personnel qualified to conduct the inspections, (3) to describe the system used for rapid dissemination of information concerning conditions at the Airport that affect, or may affect, the safe operation of air carrier user aircraft, (4) to describe the system for correcting unsafe conditions at the Airport, and (5) to describe the system for continued review of the herein-described self-inspection program."*

Deficiencies noted during inspections require various responses depending upon the potential safety hazard of the problem. If the problem

affects flight operations, a Notice to Airmen (NOTAM) is issued to the FAA and the airlines to advise air crews of the situation. More routine problems, which have no immediate affect on air operations, are processed through the maintenance request process.

When a deficiency is noted during a daily inspection, a work request should be created and forwarded to maintenance for corrective action. The Operations Division maintains two files, one for a copy of work requests which have been routed to Maintenance, and the other for a copy of the returned request evidencing completion of the work.

Work Orders Not Prepared And
Corrective Action Not Documented

In order to test how well the inspection process is working, audit staff reviewed the daily inspection reports from January 1 to May 31, 1988. Eight of the daily inspections indicated the need for some type of maintenance activity. TABLE VI is a summary of airfield deficiencies noted and corrective action taken as a result of these daily airfield inspections.

TABLE VI

SUMMARY OF AIRFIELD DEFICIENCIES NOTED
AND CORRECTIVE ACTION TAKEN
AS A RESULT OF DAILY AIRFIELD INSPECTIONS
BETWEEN JANUARY 1 AND MAY 31, 1988

Date of Inspection	Nature of Deficiency	Date of Maintenance Request	Completed
01/09/88	Taxiway lights out (G and D)	Unknown	Unknown
03/27/88	Taxiway lights out (B,C,E,G,K)	3/28/88	Unknown
03/29/88	Rubber build-up on runway center line; clean taxiway sign (30L and F)	3/29/88	Unknown
04/04/88	Sign obscured by weeds (30L and 12R)	Unknown	Unknown
04/08/88	Dead batteries, flasher lights	Unknown	Unknown
04/16/88	Perimeter fence damaged	Unknown	Unknown
04/29/88	Taxiway light out (30R and B)	Unknown	Unknown
05/20/88	Gopher activity (south of 30R)	Unknown	Unknown

As TABLE VI indicates, we had difficulty in determining if 1) identified problems had been subjected to the work order process and 2) the problem was corrected and documented. We asked airport officials to clarify this situation because it seemed improbable that the deficiencies noted could go uncorrected without being re-reported in subsequent inspections. The Director of Operations informed us that the deficiencies noted had been corrected but that the corrective action taken was not documented. According to the Director, staffing shortages had resulted in general aviation staff performing many of the inspections and they were not documenting their recommendations for corrective action.

In order to determine if the above situation had improved, we reviewed inspection reports for June and July of 1988. We found that Operations produced a work request for most of the deficiencies noted on inspection reports. However, documentation of subsequent corrective action taken was still unavailable in Operations' files.

The Need For Documentation

In our opinion, it is essential that Airport Operations Division staff produce a work order request for all deficiencies observed during daily airfield inspections. In addition, it is also essential that any and all corrective action taken as a result of a work order request be documented. By so doing, the Department can 1) maintain a complete record of the types of deficiencies observed during airfield inspections, 2) be assured that appropriate corrective actions have been taken, 3) establish a corrective action time standard based upon the severity of various airfield deficiencies, and 4) establish a reporting process to compare maintenance's responsiveness to work order requests against any established time standards.

CONCLUSION

Airport personnel are not systematically creating work order requests or other documentation for deficiencies noted during airfield inspections. In addition, the documentation of subsequent corrective action taken is inadequate. By improving the current work order documentation process, Department management will be able to assure itself that airfield deficiencies are being corrected within acceptable time limits.

RECOMMENDATION

We recommend that Airport Department Management:

Recommendation #1:

Take action to assure that a work order request form is prepared when airfield inspections disclose the need for any maintenance work on or about the airfield. If the request for maintenance is verbal, the inspector should note the date of the request; and the corrective action required on the inspection form. If a verbal request is used a work order request should still be prepared in order to document the problem and its correction. (Priority 3).

Recommendation #2:

Remind all parties involved in the work order process of the need to return work orders to the Operations Division when the requested task is completed. Operations should develop a follow-up process to assure completed work requests are returned and filed. (Priority 3)

Recommendation #3:

Establish a corrective action time standard based upon the severity of various airfield deficiencies. (Priority 3)

Recommendation #4:

Establish a reporting process to facilitate comparing Maintenance's responsiveness to work order requests against established time standards. (Priority 3)

FINDING II

THE AIRPORT NEEDS TO IMPLEMENT A FORMAL MONITORING PROGRAM TO INSURE THAT COMMERCIAL FUELING AGENTS ARE COMPLYING WITH FAA REQUIREMENTS REGARDING THE STORING, HANDLING AND DISPENSING OF HAZARDOUS MATERIALS

On January 1, 1988, the Federal Aviation Administration (FAA) issued new regulations for the storing, handling and dispensing of hazardous materials. Our review revealed that the Airport Department needs to institute a specific inspection program for commercial fuelers in order to be in compliance with these new FAA regulations.

FAA Pronouncements For The Handling And Storage Of Hazardous Materials

FAA Advisory Circular 150/5230-4 issued in August, 1982, listed the following general guidelines for evaluating fueling facilities:

> *"a. Fuel storage areas are to be fenced and placarded with Danger-Flammable and other warning signs to discourage unauthorized entry.*
>
> *b. All fuel storage tanks, trucks, and dispensers are to be properly marked as to type and/or octane of fuel and with a smoking prohibition. Operable fire extinguishers are to be available at each facility or vehicle.*
>
> *c. All fuel dispensing units are to be maintained in a clean, operable condition and have grounding cables for static electrical discharge protection.*
>
> *d. Personnel are to be trained in, and are to follow safety procedures for storing, handling, and dispensing fuel, lubricants and oxygen."*

In July 1987, *FAA Advisory Circular 150/5230-4, Change 2, Appendix 7* specified the records which organizations storing and handling fuel must maintain. The Appendix states the following:

"Fueler Records

a. Fueler staff and supervisors should develop and maintain (for at least 12 months) records adequate to at least show:

1. Source, tests run on, and ultimate delivery point of all fuel brought onto the airport;

2. Checks (and any subsequent corrective action taken) made on equipment required by these standards; and

3. Training given and qualifications/achievements of all fueling staff on airport.

b. These records should be made available for inspection by the airport operator or the FAA upon request."

The FAA revised FAR 139, Section 139.321 Handling and Storing of Hazardous Materials, to take effect on January 1, 1988 with full Airport compliance required by January 1, 1989. The portions of the regulation pertinent to airport inspection requirements are shown below:

"...(b) Each certificate holder shall establish and maintain standards acceptable to the Administrator for protecting against fire and explosions in storing, dispensing, and otherwise handling fuel, lubricants, and oxygen (other than articles and materials that are, or are intended to be aircraft cargo) on the airport. These standards shall cover facilities, procedures, and personnel training and shall address at least the following:

(1) Grounding and bonding.

(2) Public protection.

(3) Control of access to storage areas.

(4) Fire safety in fuel farm and storage areas.

(5) Fire safety in mobile fuelers, fueling pits, and fueling cabinets.

(6) Training of fueling personnel in fire safety in accordance with paragraph (e) of this section.

(7) The fire code of the public body having jurisdiction over the airport.

(c) Each certificate holder shall, as a fueling agent comply with, and except as provided in paragraph (h) of this section require all other fueling agents operating on the airport to comply with the standards established under paragraph (b) of this section and shall perform reasonable surveillance of all fueling activities on the airport with respect to those standards.

(d) Each certificate holder shall inspect the physical facilities of each airport tenant fueling agent at least once every 3 months for compliance with paragraph (b) of this section and maintain a record of that inspection for at least 12 months. The certificate holder may use an independent organization to perform this inspection if--

(1) It is acceptable by the Administrator; and

(2) It prepares a record of its inspection sufficiently detailed to assure the certificate holder and the FAA that the inspection is adequate.

(e) The training required in paragraph (b) (6) of this section shall include at least the following:

(1) At least one supervisor with each fueling agent shall have completed an aviation fuel training course in fire safety which is acceptable to the Administrator.

(2) All other employees who fuel aircraft, accept fuel shipments, or otherwise handle fuel shall receive at least on-the-job training in fire safety from the supervisor trained in accordance with paragraph (e)(1) of this section.

(f) Each certificate holder shall obtain certification once a year from each airport tenant fueling agent that the training required by paragraph (e) of this section has been accomplished.

(g) Unless otherwise authorized by the Administrator, each certificate holder shall require each tenant fueling agent to take immediate corrective action whenever the certificate holder becomes aware of noncompliance with a standard required by paragraph (b) of this section. The certificate holder shall notify the appropriate FAA Regional Director immediately when noncompliance is discovered and corrective action cannot be accomplished within a reasonable period of time."

Current Department And Air Carrier Activities

The Department currently does observe fueling activities. Airport Operations and Police personnel are on, and around the airfield every day and observe the activities of the fuelers. In addition, the fuel storage areas are adjacent to the airfield and also under daily observation.

The commercial airlines provide an additional control over fueling activities. Airline representatives provide training to the employees of the fuelers regarding the fueling requirements of their aircraft. They also make on-site visits to review the fuelers' documentation supporting fuel purity tests and maintenance records.

A Formal Inspection Program Is Needed

As is noted above, the airlines and the Department monitor and observe fueling activities. However, the Airport needs to institute a formal monitoring plan in order to be in compliance with those provisions of FAR 139 that become effective on January 1, 1989. Specifically, the Department needs to regularly review the fuelers' facilities and records regarding equipment maintenance and employee training. As part of our audit, we made a brief review of the commercial fuelers' facilities and training and maintenance records. We found that fuel farms were properly fenced and marked, fire control equipment was in place, trucks were labeled and the operations appeared clean and orderly. In addition, we observed that equipment maintenance records had appropriate daily, weekly and monthly entries and evidenced supervisory review through initials or signature.

However, we also found that although training records had been established for all employees, those records were not always updated to reflect the most current training.

CONCLUSION

Although controls exist to maintain safe airport fueling operations, the airport does not have a formal monitoring program to document the fuelers' compliance with FAA requirements.

RECOMMENDATION

We recommend that:

Recommendation #5:

The Airport develop a system to review fueling procedures to insure compliance with the elements in Federal Aviation Regulation 139, Section 139.321. (Priority 3)

FINDING III

THE AIRPORT NEEDS TO IMPROVE THE ADMINISTRATION OF RAMPSIDE OPERATIONS AND ENFORCEMENT OF RAMP TRAFFIC REGULATIONS

The ramp area of the Airport is where passengers, aircraft, equipment, hazardous materials, mail or cargo, and City and non-City employees are most proximate to one another. Accordingly, the Department has designed a Ramp Driving Permit Process to ensure that only qualified and safe drivers operate vehicles on the ramp area. Our review revealed that the Airport has not efficiently administered its Ramp Driving Permit Process in that the Operations Division and Police are duplicating tasks in monitoring Permits and ID badges. In addition, Police have not ensured that cited ramp drivers are complying with post citation procedures, or coordinated with Operations to record rampside driving citations on the employee's driving record. Finally, the Airport has no procedures to monitor employee California driving records once a driving permit has been issued. As a result, the Airport needs to improve the efficiency of its Ramp Driving Permit process which is intended to keep unqualified drivers from an area where safety is critical.

The Ramp Area

The ramp area of the airport (often referred to as the apron) is a defined area intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, refueling, parking or maintenance.

Persons operating motorized equipment on the ramp include employees of Airport tenants (i.e., airlines, FBO's, aviation support services) and Airport Department employees. The mixture of aircraft, fueling equipment, tugs/carts, and other ramp equipment used in rampside activities presents serious safety problems. Absent any controls, there is a danger that persons operating vehicles or other types of mobile equipment on the ramp may act in an unsafe manner and pose a risk to airline passengers and equipment. Additionally, the number of non-city employees who are not under the direct control of the Airport Department evidences the need for stringent security controls.

The Airport has done a commendable job of addressing rampside safety and security through the Ramp Driving Permit Process and a Ramp Identification Badge System. However, improvements are needed to ensure that these internal controls are effective and are executed efficiently. Specifically, we found the following deficiencies:

- The Airport has not efficiently administered rampside operations.
- The Airport has not enforced Ramp Traffic Citation procedures.
- The Airport has no procedures to monitor the employees' California driving record once the Ramp Driving Permit has been issued.

Ramp Driving Permits

Although there are no FAA requirements to issue Ramp Driving Permits, the Airport Department recognizes the need for established rules

and regulations that address the unique rampside operations and the potential danger to aircraft and passengers. The Airport has taken the initiative to develop the Ramp Driving Permit Process to ensure that there are safety rules and that employees are knowledgeable about ramp driving. The rules and regulations governing rampside driving are outlined in the "San Jose International Airport Ramp Traffic Regulations" (Handbook).

As a means of ensuring that ramp drivers are familiar with the rules and regulations and are otherwise competent to operate motorized equipment, employees are required to secure an Airport Restricted Area Driver Permit (Ramp Driving Permit) within ten working days of employment. In order to get a permit, employees are required to pass a written test based on the Handbook and possess a valid California Driver's License (CDL). Operations scores the test and notifies Airport Police to verify the employee's CDL with the Department of Motor Vehicles. If the employee's CDL is valid and the employee misses no more than five questions on the test, Operations issues a permit that is valid until revoked, suspended, or the individual's CDL expires. If, however, the employee's license is invalid or they fail the test, a permit will not be issued until the employee secures a valid CDL or retakes the test. Employees with an invalid state license are not permitted to operate a motor vehicle on the Airport Ramp.

The Airport Police are responsible for the enforcement of the Ramp Traffic Regulations. Officers routinely patrol the ramp and check for valid ID badges and Permits. In addition, officers who observe violations of the safety procedures, issue ramp driving citations. It should be noted that the

term "citation" is an Airport Police term and is used throughout the Handbook. It is not, however, an official summons to appear before a court as the term traditionally implies. Rather, "citation" is a "Notice of Violation of Airport Regulations." The Airport does not attach any fine or penalty other than possible suspension of the Ramp Driving Permit for excessive violations.

According to the Handbook the procedures for issuing citations are as follows:

1. *The employee receiving a citation will be issued one copy of the citation.*
2. *The officer will retain two copies which will be filed with the Airport Police Section.*
3. *The employee is to have his/her copy of the citation signed by his/her supervisor and returned to the Airport Police Duty Office within 72 hours.*
4. *If the original citation is not returned within 72 hours, a copy of the citation will be mailed to the employee's company.*
5. *If there is no response by the company within 14 days after mailing, the employee's driving permit may be suspended by the Airport and a notice of suspension will be sent to the employee's company, i.e., airline, FBO, etc.*
6. *...An employee has the right to appeal through his/her employer, i.e., airline/company manager to the Airport Department any citation received.*

The Handbook also provides that the employee's Ramp Driving Permit may be suspended if they receive:

1. *Three citations: The permit may be suspended for a period of five working days.*

2. *Four citations: The permit may be suspended for an additional ten working days.*

3. *Five citations: The permit may be suspended for an additional twenty working days.*

4. *Six citations: The permit may be revoked indefinitely.*

The Operations Division of the Airport is responsible for the administration of the issuance of permits. They maintain two separate records of outstanding permits. One record, maintained on computer, is the master list of permits, and the second record is a file card for each employee on which the employee's citations are to be recorded.

Ramp Identification Badges

Airport Police administer and enforce an Identification Badge system. All airport employees, including non-city airport tenant employees are required to have an Identification Badge (ID badge) in their possession at all times. The badges are color-coded to distinguish employees who work in the terminal from those who require access to the ramp, thereby reducing the number of individuals authorized to be on the airfield.

Airport Police recently initiated an update of outstanding badges. All employees with badges were required to obtain a numbered validation sticker. An ID badge without a brightly colored validation sticker is a clue for the Officer to investigate and determine if the employee is in fact currently employed. To assure the success of the ID program, formal

enforcement procedures were initiated in May, 1988. Included in these procedures is the requirement that all officers will be specifically assigned ramp ID enforcement at various times on all shifts. If the Police stop an employee who does not have an ID with a valid sticker, then the Police verify employment with the employee's immediate on-duty supervisor and issue a citation that must be returned with proof of correction within 72 hours. However, if the Police stop an individual who is not a current employee and should not be on the ramp, then the Police escort that individual from the ramp area.

THE AIRPORT NEEDS TO IMPROVE THE ADMINISTRATION OF RAMPSIDE OPERATIONS

Airport Operations and Police each maintain data on airport employees in order to assure safe and secure rampside activities. Although each division requires different information about employees and has a different focus, there are opportunities to improve the administration and control of rampside operations through better coordination between the two divisions. This lack of coordination between the two divisions is largely a function of the current issuance and monitoring procedures. Specifically:

1. *ISSUANCE PROCEDURES*: Airport Police are responsible for issuing ID badges to new employees. However, Operations is responsible for issuing Ramp Driving Permits to employees who will be operating a motorized vehicle on the ramp.

2. MONITORING PROCEDURES: As noted earlier, Airport Police recently initiated an aggressive campaign to revalidate outstanding ID badges and purge the system of badges issued to employees who were no longer employed. Police asked employers to verify the employment status of employees on the outstanding ID badge list. As an indication that a badge is valid, Police issue a numbered sticker. In order to monitor the outstanding ID badges, Airport Police have requested that employers provide a monthly update of terminated employees and return the ID badges for those terminated employees.

Operations, on the other hand, monitors outstanding Ramp Driving Permit records. Updating these records is cumbersome and time-consuming because there are over 1,160 outstanding Ramp Driving Permits issued to employees of over 40 companies. To update their records, Operations periodically sends employers a list of outstanding driving permits and asks them to verify employment status.

Thus, both Police and Operations rely on employers to keep the Airport's records up-to-date. Further, Police and Operations do not coordinate their requests for information from tenant employers. This lack of coordination between Police and Operations has resulted in the following deficiencies:

- The two Divisions are duplicating each other's efforts to get the same information from the employers albeit for different purposes.

- Police do not have quick access to information regarding Ramp Driving Permits because Operations maintains ramp driving records.

- Driving records for those persons issued Ramp Driving Permits are out-of-date. This issue becomes critical if the Airport is to implement a driver's license monitoring program.

AIRPORT POLICE HAVE NOT ENFORCED RAMP TRAFFIC CITATION PROCEDURES

Airport Police have not enforced Ramp Traffic Citation Procedures. As a result, follow-up on citations issued is haphazard and non-city, tenant employees are not complying with Ramp Traffic Regulations. The Handbook requires employees to obtain a Ramp Driving Permit within ten working days of employment. Since most of the airport employees do not work directly for the Airport Department, Airport Police primarily enforce this regulation through random checks for valid Ramp Driving Permits. Therefore, it is particularly important to ensure that cited employees take corrective action. We reviewed the citations issued since 1985 and found numerous instances where Police failed to follow through on citations and the employer/employee never complied with the requirements of the citation. For example:

1. Employees are supposed to return citations to Airport Police with a signature by their supervisor within 72 hours of issuance. We found that 47% of the citations were never returned with a supervisor's signature.

2. Even though the employee returns the citation with a supervisor's signature, there is no guarantee that the problem will be resolved. We reviewed eight citations issued to employees who were driving without a permit and which had been signed by a supervisor. Only three of those eight ever received valid driving permits. In the other five instances, the employees did not comply with ramp permit requirements.

3. Employees are allowed a certain number of citations before their permit is revoked. However, neither the Police nor Operations record citations on the employee's driving record. Accordingly, no sanctions, such as suspension or revocation of Ramp Driving Permits, can be imposed.

THE AIRPORT NEEDS TO ENSURE THAT PERMIT HOLDERS MAINTAIN VALID CALIFORNIA DRIVER'S LICENSES

We reviewed the outstanding Ramp Driving Permits to verify that ramp drivers possessed valid California Driver's Licenses in accordance with Handbook requirements. A sample of 189 permits was selected

from a master list Operations provided. We then checked records at the Department of Motor Vehicles to verify that the CDL was valid throughout the term of employment. We determined that 9 out of 189 drivers had a suspended or revoked CDL at some point during their employment at the airport. Although the Handbook states that the permit will be valid until revoked, suspended, or expiration of current California State Driver's License, without Airport Police monitoring there is no means of determining when a CDL becomes invalid. As a result, the Airport is exposed to the risk that an unsafe or incompetent driver is being allowed to operate vehicles in the ramp area of the Airport.

The DMV has an Employer Pull Notice Program which allows participating employers to be automatically notified when an employee's driving record is posted with a conviction, accident or departmental action. This service is provided free to government employers and to non-government employers for a fee.

CONCLUSION

The lack of coordination between Airport Police and Operations has resulted in inefficient operation and duplication of effort. Additionally, the failure of Airport Police to enforce the Ramp Traffic Citation Procedures may result in unqualified drivers in an area where safety is critical.

RECOMMENDATIONS:

We recommended that:

Recommendation #6:

The Airport Police and Operations establish procedures to provide for better coordination with their respective Divisions and the tenant employers. The Airport should encourage employers to flag personnel files for those employees who have ID badges and driver's permits. Upon termination, the employer should collect both documents and return them to the airport. (Priority 3)

Recommendation #7:

The Airport should consider combining the Ramp Driving Permit Process with the ID badge process to eliminate duplication of effort between Police and Operations and to make Ramp Driving Permit information more readily available to Police when issuing citations. (Priority 3)

Recommendation #8:

The Airport Police should establish a tickler file to ensure that employees take corrective action when they are cited for a driving violation. In addition, Police should establish procedures to ensure that citations are recorded on the employee's ramp driving record. (Priority 3)

Recommendation #9:

The Airport should develop a periodic permit renewal process to protect against an employee driving with a suspended or revoked state driver's license. The Airport should check with the Department of Motor Vehicles regarding their Employer Notification Program which provides driver's license change of status reports. (Priority 3)

FINDING IV

THE AIRPORT NEEDS TO IMPROVE ITS CONTROL OVER INVALID CARD KEYS

The Airport does not have formal procedures to ensure that lost or stolen card keys will be invalidated. Based upon our test of the invalidation process, there is a threat that unauthorized persons can gain access to the airfield.

Restricting Access To The Airfield

A major factor in airport security is restricting airfield access to only those individuals who are authorized to enter secured areas. There are a number of controls to prevent unauthorized persons from accessing the airfield. For example, access from the terminal is controlled by locked doors under airport control and security checkpoints which are the responsibility of the airlines. In addition, the entire perimeter of the airfield is fenced and non-terminal access is through gates controlled by cipher locks and a card key system. Cipher locks are locks which require the manual entry of a digital code to operate the gate. Card key systems require a card to be inserted in the lock to the gate.

The Card Key System

The card key system is a method for airport tenants including FBOs, flying clubs, airplane owners and airlines to gain access to the airfield. The procedures for issuing card keys are outlined in the Manual Of Procedures

400:209. The procedures address 1) the number of keys to be issued, 2) who is authorized to issue keys, 3) forms to be filed, 4) the amount of the deposit to be collected, and 5) refund procedures. One of the objectives of the procedures is to limit the number of keys outstanding, thus reducing the likelihood that keys will end up in the possession of unauthorized persons.

For example, there is a limit per airplane of the number of card keys that will be issued unless a need for multiple keys can be demonstrated. In addition, the airport can program which gate will accept certain keys, thus limiting the tenant's access to the gate most appropriate for their parking space. As keys are reported lost or stolen, Maintenance can mechanically invalidate them in the system.

A major concern is that lost or stolen keys will not be invalidated in the system, thus granting airfield access to an unauthorized person. The procedures do not address this concern. Instead, there are informal procedures for invalidating via telephone or a note left on a desk. Specifically, Operations does not issue formal paperwork, such as a work order, with Maintenance when keys need to be mechanically invalidated.

As a means of testing if lost or stolen cards are invalidated in the system, we obtained a listing of 36 card keys that tenants had reported as being lost or stolen and tested the system to see if these card keys were still valid. Of the 36 card keys we tested, eight were still valid in the system. We were able to determine that Operations had requested that at least three of these cards be invalidated several months before we conducted our test.

Based upon our test results, it appears that the Department's lack of written procedures in this area has resulted in lost or stolen card keys not being invalidated. As a result, the Airport is exposed to the risk that unauthorized individuals can gain access to the airfield.

CONCLUSION

It is important to restrict airfield access to only authorized individuals. Absent administrative control of the cancellation process, we identified that some lost or stolen keys were not invalidated thus exposing the Department to the risk that unauthorized individuals can gain access to the airfield.

RECOMMENDATION:

We recommend that:

Recommendation #10:

The Airport should initiate a formal work request procedure for the cancellation of invalid card keys that will incorporate the following:

1. Keys to be deleted.
2. Date of request.
3. Method of responding when Maintenance has completed work requests. (Priority 3)

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